Production Wellhead Sand Detection & Control

Sand pulled from the reservoir is a major threat and limiting factor to the operator ability to ensure maximum uninterrupted production.

Modern oil & gas producers apply multiple measures to protect their reservoirs and assets from the dangers of uncontrolled sand production. This ranges from well completion methods, such as gravel or fracture packs, wellbore sand screens, selective or oriented perforation, and direct flow control. Top performers in this segment are identified by their ability to establish and execute a data-driven sand management strategy to address these challenges.

Offshore operators using a data-driven approach to maintenance and control, experience 36% less unplanned downtime. This resulted in a $17 million impact on the bottom line annually.*

* [Kimberlite study]

FORMATION DAMAGE

Pulling too much sand from the reservoir will weaken the structural integrity and can ultimately result in a collapse of the formation, reducing or killing off the ability to produce from the nearby area. Uncontrolled sand and fines migration can also impair the permeability of reservoir rock, reducing the natural productivity of the formation.

EROSION DAMAGE

Metal loss from excessive sand induced erosion:

- Increased wear on sand screens resulting in increased sand production potential
- Critical loss of control and containment, due to erosion on wellhead equipment like chokes, valves and piping

UNPLANNED OUTAGES

Production availability can be severely impacted by:

- Plugging of wellbores
- Accumulation in piping and vessels due to inefficient sand removal
- Replacement of assets due to loss of containment

SAND DISPOSAL

Removal of large volumes of sand produced from a well is both a logistical and environmental challenge as it needs to be properly processed and disposed.

EMERSON

WELLHEAD SAND MONITORING

REAL-TIME SAND MEASURMENTS

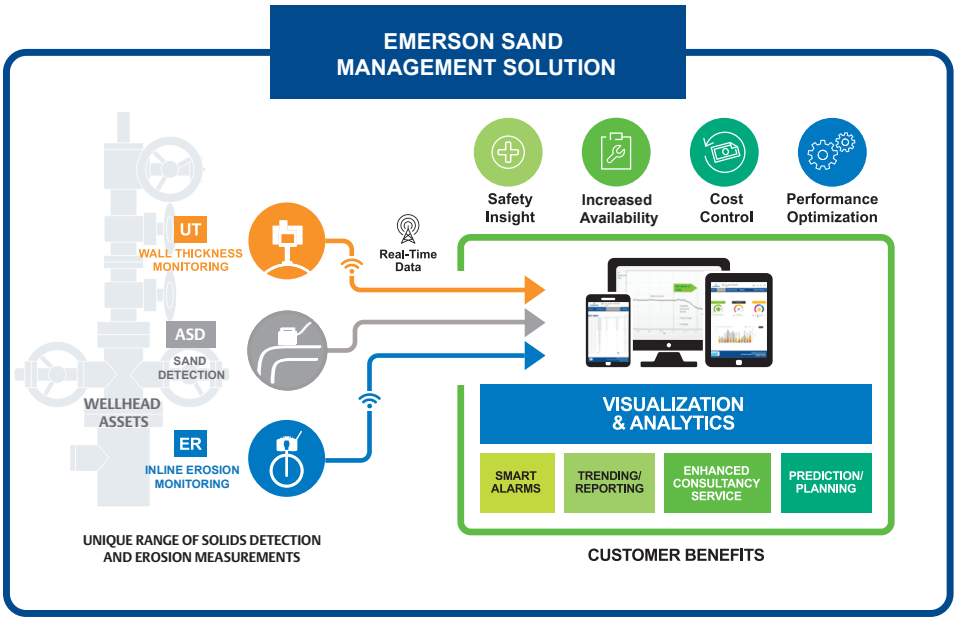
Emerson offers the widest portfolio of best-in-class measurements to detect the risk of and impact from sand production. Real-time sand measurements that provide greater insight into the performance of your sand protection and asset integrity strategies are key to supporting a data-driven sand management strategy. The combination of Roxar non-intrusive acoustic sand detectors, Roxar inline erosion probes, and Permasense ultrasonic wall thickness measurements provide the ultimate in early sand detection, quantification, and erosion impact measurements. Complimentary measurement technologies combined with industry-leading data processing, analytics and visualization, enable you to turn these insights into value-adding actions.

PRODUCTION CONTROL AND OPTIMIZATION

The ability to establish sand production profiles during well testing and determining Maximum Sand Free Rate (MSFR) and/or Maximum Allowable Sand Free Rate (MASR) are important parameters when deciding your production and sand management strategy. Operator insight and confidence is key in understanding maximim acceptable sand rate production through the reservoir lifecycle, ensuring maximum returns on your reservoirs and assets.

MAXIMIZING IN SERVICE LIFE AND PROFITABILITY

Combining data from the acoustic sand detector, inline erosion probes, and wall thickness monitoring sensors and leveraging Emerson's flexible infrastructure for data retrieval delivers real-time insights into the actual condition of your hydrocarbon producers. The Emerson Sand Management Solution enables a data-driven sand management strategy, resulting in increased hydrocarbon production.



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